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EXAMINER

SORRELL, ERON J

ART UNIT

PAPER NUMBER

2182

DATE MAILED: 09/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/527,634

Applicant(s)

LO ET AL.

Examiner

Eron J Sorrell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

1. Claims 1-10 have been examined.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
3. The drawings are objected to because some of the modules in Figure 1 are not labeled with reference numbers. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 3,4, and 7-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Referring to claims 3 and 7, in line 2 of claim 3 and in lines 10-12 of claim 7, it appears as if the applicant is claiming one register having a write-only portion, but is only read from by a user. From the drawings (figure 4), it appears as if there are two separate registers, one of which is write only and the other being read-only.

7. Applicant is advised that should claims 4 and 5 be found allowable, claims 8 and 9 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). It appears that claims 8 and 9 have incorrect dependency making them identical to claims 4 and 5. The claims will be examined with the assumption that claims 8 and 9 should both depend on claim 7, however appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

9. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Messerly et al (U.S. Patent No. 6,381,661).

10. Referring to claim 1, Messerly et al. disclose a universal asynchronous receiver transmitter (UART) comprising:

a first-in first-out (FIFO) buffer (see items labeled 206 on figure 2);

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a circuit for detecting a last word transmitted from a FIFO buffer (see lines 35-39 of column 4);

a transmitter empty circuit for generating a transmitter empty signal (see lines 35-39 of column 4);

a delay circuit for delaying generation of the transmitter empty signal (see lines 16-24 of column 5); and

a programmable register for setting the programmable delay time (see lines 52-56 of column 6 and 14-17 of column 8).

Claim Rejections - 35 USC § 103

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. As far as the examiner can interpret the claims in light of the previous 112 second paragraph rejections, claims 3,4 and 7-10 are rejected under 35 USC 103(a).

14. Claims 2 ^{and 5} are rejected under 35 U.S.C. 103(a) as being unpatentable over Messerly et al.

15. Referring to claim 2, Messerly et al. teaches using an internal transmitter empty signal (see lines 35-39 of column 4).

Messerly et al. fails to teach the transmitter empty signal being triggered from the stop bit of the last word.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to configure the UART of Messerly et al. such that the transmitter empty signal is triggered by the stop bit of the last word because it is common practice in asynchronous communication to use a stop bit

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to indicate the end of a data word. When the last stop bit is detected the transmitter empty signal can be generated.

16. Referring to claim 5, Messerly et al. discloses a UART that can operate with a range of word length including a 4-bit word length (see lines 6-16 of column 5).

Messerly et al. fails to disclose the programmable register being 4-bits in length.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the UART of Messerly et al. such that the programmable register is 4-bits in length because Messerly suggests that this modification can be made.

17. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Messerly et al. in view of Tobias (U.S. Patent No. 6,363,501).

18. Referring to claim 3, Messerly et al. fail to teach a programmable register comprising a shadow register.

Tobias et al. teach a programmable register comprising a shadow register, which can be used to restore the state of read-only or write-only registers during periods of time when the

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device is entering or exiting periods of low-power or hibernation (see lines 55-65 of column 5).

One of ordinary skill in the art at the time of the applicant's invention would recognized the advantages of returning a device to the same state is was in prior to a period of hibernation when exiting that hibernation period. It is for this reason that it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to further modify the UART of Messerly et al. to include a shadow register.

19. Referring to claim 4, Messerly et al., and Tobias et al. fail to disclose the write-only shadow register portion comprising the first four bits of the modem status register. It would have been obvious to one of ordinary skill in the art to configure the UART of Messerly et al. as modified above such that the shadow register comprises the first four bits of a modem status register. One of ordinary skill in the art would have been motivated to make this modification because the state of the modem status register should be restored when recovering from a period of hibernation or low power.

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20. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Messerly et al in view of Michael (U.S. Patent No. 5,140,679).

21. Referring to claim 6, Messerly et al. discloses that the delay circuit and the programmable register is a single circuit and a register connected to control the delay (see lines 52-67 of column 6 and lines 1-10 of column 7).

Messerly et al. fails to teach the UART having a plurality of channels, each having a FIFO buffer and a circuit for detecting the last word.

Michael teaches a UART comprising a plurality of channels, each channel having a FIFO buffer and a circuit for detecting the last word (see lines 14-17 of column 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the UART of Messerly et al. to comprise multiple channels as in the UART disclosed by Michael. One of ordinary skill in the art would have been motivated to make this modification so the UART disclosed by Messerly et al. could be used to transfer data to a plurality of devices simultaneously.

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22. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Messerly et al. in view of Micheal as applied to claim 6 above and further in view of Tobias et al.

23. Referring to claim 7, the modified UART of Messerly as applied to claim 6 above fails to teach the programmable register comprising a shadow register which is a write only portion of a register only read by a user.

Toias et al. teach a programmable register comprising a shadow register, which can be used to restore the state of read-only or write-only registers during periods of time when the device is entering or exiting periods of low-power or hibernation (see lines 55-65 of column 5).

One of ordinary skill in the art at the time of the applicant's invention would recognized the advantages of returning a device to the same state is was in prior to a period of hibernation when exiting that hibernation period. It is for this reason that it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to further modify the UART of Messerly et al. to include a shadow register.

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24. Referring to claim 8, Messerly et al., Michael, and Tobias et al. fail to disclose the write-only shadow register portion comprising the first four bits of the modem status register. It would have been obvious to one of ordinary skill in the art to configure the UART of Messerly et al. as modified above such that the shadow register comprises the first four bits of a modem status register. One of ordinary skill in the art would have been motivated to make this modification because the state of the modem status register should be restored when recovering from a period of hibernation or low power.

25. Referring to claim 9, Messerly et al. discloses a UART that can operate with a range of word length including a 4-bit word length (see lines 6-16 of column 5).

Messerly et al. fails to disclose the programmable register being 4-bits in length.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the UART of Messerly et al. such that the programmable register is 4-bits in length because Messerly suggests that this modification can be made.

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26. Referring to claim 10, Michael discloses a UART comprising at least 8 channels (see lines 19-28 of column 4).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J Sorrell whose telephone number is 703 305-7800. The examiner can normally be reached on Monday-Friday 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery Gaffin can be reached on 703 308-3301. The fax phone numbers for the organization where this application or proceeding is assigned are 703 746-7239 for regular communications and 703 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.

EJS
September 6, 2002


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